

Claims

1. A mobile communication terminal for supporting a network mobile game by using electronic compass function,
5 the mobile game being a game electronically performed by or at a mobile communication terminal, comprising:

a program memory unit storing a compiler for performing compilation to execute the mobile game and a wireless Internet browser for gaining access to a wireless
10 Internet;

a parameter storage unit for storing therein various parameters for use in performing a data communication;

a subscriber identity module (SIM) for storing therein a mobile identification number (MIN), an electric serial
15 number (ESN), a personal security key and various data required to operate the mobile communication terminal;

a key input unit including at least one key button for inputting commands for selecting, starting, playing and stopping the mobile game;

20 an electronic compass module incorporating a magnetic sensor for outputting a sensor output signal proportional to magnitude of the external geomagnetic field which varies with an upward, a downward, a leftward and a rightward motion of the mobile communication terminal, for outputting
25 a horizontal or a vertical rotation angle value;

a microprocessor for controlling the mobile game based

on the key values inputted from the key input unit, wherein the microprocessor is controlled to transmit the horizontal or the vertical rotation angle value received from the electronic compass module while conducting the mobile game to a specific wireless Internet game server via the wireless Internet as a data value for controlling movement of a user-controlled character; and

a liquid crystal display (LCD) unit for displaying the mobile game under the control of the microprocessor.

2. The mobile communication terminal of claim 1, wherein the parameter storage unit stores therein parameters to be used in synchronous, asynchronous and fourth-generation communication systems defined by 3GPP (3rd generation partnership project), 3GPP2, ITU (international communication union), OHG (operator harmonization group).

3. The mobile communication terminal of claim 1, wherein the wireless Internet browser is at least one of a WAP (wireless application protocol) browser coded in WML (wireless markup language), a Mobile Explorer coded in m-HTML (Microsoft-HTML) and a Compact Netfront coded in c-HTML (Compact-HTML).

4. The mobile communication terminal of claim 1, wherein, if a network mobile game is selected from the key input unit,

the mobile communication terminal drives the wireless Internet browser to gain access to the wireless Internet game server via the wireless Internet and executes the network mobile game.

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5. The mobile communication terminal of claim 1, wherein the electronic compass module includes:

an X-axis magnetic sensor and a Y-axis magnetic sensor for generating an X-axis magnetic sensor output signal and a
10 Y-axis magnetic sensor output signal depending on variations in an X-axis and a Y-axis component of the external geomagnetic field, respectively;

an analog/digital converter (ADC) for receiving the X-axis and/or the Y-axis magnetic sensor signal and converting
15 received signal into a digital signal; and

a compensation processor for receiving the digital signal from the ADC, determining whether or not a compensation of the digital signal is required, performing the compensation of the digital signal if the compensation
20 is determined to be required, and transferring compensated digital signal to the microprocessor.

6. The mobile communication terminal of claim 5, wherein the electronic compass module further includes a constant DC
25 voltage circuit for supplying a constant DC voltage to the X-axis magnetic sensor and the Y-axis magnetic sensor.

7. The mobile communication terminal of claim 5, wherein the compensation processor incorporates therein a compensation algorithm for use in performing the compensation.

8. The mobile communication terminal of claim 5, wherein the compensation processor determines that the compensation is required when the received digital signal has a negative value or a value of more than or equal to 360°.

9. The mobile communication terminal of claim 5, wherein the compensation processor determines that the compensation is required when the received digital signal has a value greater than a predetermined threshold value.

10. The mobile communication terminal of claim 1, wherein the user-controlled character is rotated leftward and/or rightward about a point on a vertical axis of the user-controlled character in response to the movement of the mobile communication terminal.

11. The mobile communication terminal of claim 1, wherein the user-controlled character is rotated upward and/or downward about a point on a horizontal axis of the user-controlled character in response to the movement of the

mobile communication terminal.

12. The mobile communication terminal of claim 1, wherein the electronic compass module is embedded in a body portion of the mobile communication terminal in an equilibrium state with the body of the mobile communication terminal.

13. The mobile communication terminal of claim 1, further comprising a speaker for outputting a sound created in the mobile game under play.

14. The mobile communication terminal of claim 1, wherein the mobile communication terminal is selected a group including a PDA (personal digital assistant), a cellular phone, a hand-held PC, a GSM (global system for mobile) phone, a W-CDMA (wideband CDMA) phone, a CDMA-2000 phone and an MBS (mobile broadband system) phone.

15. A method for providing a network mobile game service by using a mobile communication terminal incorporating an electronic compass module therein in a wireless Internet game system, the mobile game being a game electronically performed by or at a mobile communication terminal, comprising the steps of:

(a) providing a mobile game list to the mobile communication terminal connected through a wireless

Internet;

(b) presenting a network mobile game selected by the mobile communication terminal and a game mode supported by the selected network mobile game;

5 (c) providing a game mode selection screen, if the selected network mobile game is determined to be a dual mode game;

(d) executing the selected network mobile game and waiting for control data to be received, if an electronic
10 compass mode is selected on the mobile communication terminal;

(e) controlling a movement of a user-controlled character based on the received control data; and

(f) transmitting to the mobile communication
15 terminal a game screen on which the user-controlled character is moved.

16. The method of claim 15, wherein, in step (a), the mobile game list includes at least one network mobile game
20 that is executable through an access to a wireless Internet game server via the wireless Internet.

17. The method of claim 15, wherein, in step (c), the dual mode game refers to a mobile game which supports both a key
25 matrix mode in which the movement of the user-controlled character is controlled by using at least one key button

provided on a key matrix and the electronic compass module in which the movement of the user-controlled character is controlled by using the incorporated electronic compass module.

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18. The method of claim 17, wherein, if the selected network mobile game supports the key matrix mode or the electronic compass mode, in step (d), the selected mobile game is executed and the control data to be received is waited for.

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19. The method of claim 15, wherein, in step (c), the game mode selection screen refers to a screen capable of selecting one of the key matrix mode and the electronic compass mode.

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20. The method of claim 15, wherein, in step (d), the control data contains a horizontal rotation angle value and/or a vertical rotation angle value transmitted from the mobile communication terminal.

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21. The method of claim 20, wherein the control data is data which is used to control an upward, a downward, a leftward or a rightward movement of the user-controlled character in the mobile game under execution based on the received horizontal and/or the received vertical rotation

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angle value.

22. The method of claim 15, wherein the network mobile
game refers to a game for allowing the user-controlled
5 character to be selectively moved along at least one
direction selected from an upward, a downward, a leftward
and a rightward direction.

23. The method of claim 22, wherein the network mobile
10 game includes a game for providing a match mode between a
user and a computer endowed with an artificial intelligence
classified by at least one level and a match mode between
two users or more.